High Doses of Statins and Stroke Outcome

To the Editor:

In the November issue of Stroke, Goldstein et al1 report a post hoc analysis about the Stroke Prevention by Aggressive Reduction in Cholesterol Levels (SPARCL) trial that explores whether treatment with 80 mg atorvastatin per day favorably shifts the distribution of severities of ischemic cerebrovascular outcomes. The authors conclude that the outcome of recurrent ischemic cerebrovascular events might be improved among statin users as compared with nonusers.2

Many experimental studies have reported the pleiotropic effects of statins, including antioxidant properties, immunomodulatory actions, improvement of endothelial function, increasing nitric oxide bioavailability, promoting atherosclerotic plaque stabilization, and inhibiting inflammatory responses, and these effects might have benefits in brain protection and stroke recovery.2 Indeed, the statin therapy discontinuation during the acute phase of an ischemic stroke is associated with poor neurological outcome and increased brain injury.3

The SPARCL study presents valuable clinical information about the effects of atorvastatin on stroke outcomes when analyzing the recurrences in this trial of secondary stroke prevention. The authors evaluate the stroke severity by means of functional status at 90 days and they mention as an important study limitation the lack of information about neurological status in the acute phase of the ischemic stroke. Moreover, it is unknown if the variability in stroke management, in-hospital complications, and poststroke rehabilitation between atorvastatin users and nonusers could be affecting poststroke functional outcome.

Our group has previously analyzed the effect of pretreatment with statins in the ischemic stroke outcome of a series of 2742 in-hospital patients with the same acute stroke management protocol.4 The logistic regression analyses, adjusted by stroke severity and in-hospital complications, showed that previous treatment with statins was an independent predictor for better outcome at discharge measured by a modified Rankin Scale <2. Our study also showed that patients taking statins presented lesser stroke severity on admission, although they have a higher burden of vascular risk factors.

On the other hand, the SPARCL trial included small vessel disease and atherothrombotic strokes but excluded patients with cardioembolic sources of stroke. This selection does not allow to establish the effect of statins in stroke severity among the different etiologic subtypes. Nevertheless, our study included atherothrombotic, lacunar, and cardioembolic infarctions, infarctions’ unusual cause, and infarctions of undetermined origin. The subgroup analysis showed that statins remained as an independent factor for better outcome in atherothrombotic and small vessel disease strokes, but not in the other stroke subtypes.5 The effect of statins on cerebral endothelial function5,6 could explain, at least partially, its protective cerebral effect on arterial origin ischemia.

Further trials are needed to demonstrate if statins have a cerebral protective effect on ischemic acute stroke and which stroke subtypes will be benefited the most.

Disclosures

None.

Patricia Martínez-Sánchez, MD
Blanca Fuentes, MD, PhD
Exuperio Díez-Tejedor, MD, PhD
Stroke Center
Department of Neurology
La Paz University Hospital
Universidad Autónoma de Madrid
Madrid, Spain


High Doses of Statins and Stroke Outcome
Patricia Martínez-Sánchez, Blanca Fuentes and Exuperio Diez-Tejedor

Stroke. 2010;41:e162; originally published online February 4, 2010; doi: 10.1161/STROKEAHA.109.572982
Stroke is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
Copyright © 2010 American Heart Association, Inc. All rights reserved.
Print ISSN: 0039-2499. Online ISSN: 1524-4628

The online version of this article, along with updated information and services, is located on the World Wide Web at:
http://stroke.ahajournals.org/content/41/3/e162

Permissions: Requests for permissions to reproduce figures, tables, or portions of articles originally published in Stroke can be obtained via RightsLink, a service of the Copyright Clearance Center, not the Editorial Office. Once the online version of the published article for which permission is being requested is located, click Request Permissions in the middle column of the Web page under Services. Further information about this process is available in the Permissions and Rights Question and Answer document.

Reprints: Information about reprints can be found online at:
http://www.lww.com/reprints

Subscriptions: Information about subscribing to Stroke is online at:
http://stroke.ahajournals.org//subscriptions/